

# Acidity in the Soil

## Curriculum Links

### Science

- The growth and survival of living things are affected by the physical conditions of their environment (ACSSU094).
- Scientific knowledge is used to inform personal and community decisions (ACSHE217).
- With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be (ACSIS231).

## About this activity

Soil testing is very popular in Kitchen Garden Schools, and it is enormously useful in the garden – not just for planning where plants will go, but also to involve students in an understanding of the needs of plants and the reasons behind our treatment of the soil (with compost and other additives such as lime). It goes a small way towards explaining why some plants love to grow together and others won't tolerate the same conditions. You can even explain to students why we don't put citrus and onions into our worm farms, using a basic understanding of pH levels to show that these are acidic items that make worms uncomfortable .

## Demonstrating pH levels in substances

Many people have heard of this pH demonstration using red cabbage water, but have put it aside as 'too hard'. Do try it! It really is easy – particularly if you have bits of red cabbage from the garden – and it is lots of fun. As with any experiment, try it out first on your own; it's easy to do at home or in the kitchen, and doesn't need special equipment.

See the notes in Lesson 3 about which substances to try testing so that you get a full range from acid to alkaline. Test a variety of substances but don't forget to test the soil from your garden, plus perhaps your compost bins, the worm farm and even under specific plants (label the samples, e.g. 'Under the rhubarb', 'Under the banana tree', 'Chicken coop', 'Wet compost, middle bin' and so on ...) and allow time for the sediment to settle.

You can use the demonstration to lead to a discussion about acidity, alkalinity and pH levels in the soil, the requirements of plants or the way our taste buds sense acidic foods (vinegar, lemon juice – very sour!) as opposed to alkaline foods (chalky substances – soft and sweetish). When testing the soil using this method, you could check your findings against the results of one of the readily available commercial soil testing kits on the market.

Several Kitchen Garden Schools have told us that they get the best value out of the activity when they introduce it with questioning and discussion with the class first – because once the students see the change in colours in the solutions, it's a little hard to bring them back to thinking about plants for a few minutes!

